ABSTRACT

What is provided is a direct-current converter which improves unstableness of operations owing to an error of a bottom detection circuit and fluctuations of a detection point which are caused by disturbance. The direct-current converter includes a bottom detection circuit 13 which detects a minimum voltage of a main switch Q1 after an auxiliary switch Q2 is switched off, an ideal gate signal generation circuit 21 which generates an ideal gate signal for switching on the main switch Q1 at a time of the minimum voltage of the main switch Q1 based on an output of the bottom detection circuit 13, a comparison circuit 22 which calculates an error output between the ideal gate signal generated by the ideal gate signal generation circuit 21 and an actual gate signal which switches on the main switch Q1, and a first delay circuit 14 which controls a delay of an ON time of the main switch Q1 by the actual gate signal based on the error output of the comparison circuit 22, thereby performing control to make the actual gate signal approach the ideal gate signal.